

Integra is

Primitivas



F^i intervalo I f^i

primitiva

F'^i

Exempl

0

F_i

F_i

F_i

Primitivas



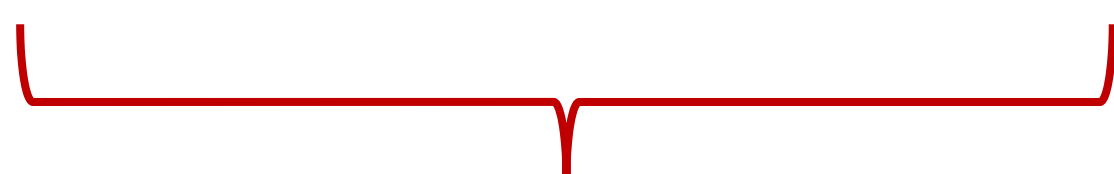
F_i primitiva f_i



G_i primitiva f_i

Integral Indefinida

F i primitiva f i



$$\int f(x) dx = i F(x) + c i$$

Integral
indefinida

$$\int \overbrace{f(x)}^{\text{integrand}} dx$$

Função
integrando

Identifica a variável de
integração

$$Z_0$$
$$V_{incident}$$

$$Z_L$$

$$z = \frac{Z_L}{Z_0}$$

$$\Gamma = \frac{V_{reflected}}{V_{incident}}$$

$$\frac{a}{b+c} = a \div (b+c) \neq \frac{a}{b} + \frac{a}{c}$$



Integraais: Propriedades

Propriedad

Sejam k e k constante^{es}. Então:

$$\int k f(x) dx = k \int f(x) dx$$

$$\int (f(x) + g(x)) dx = \int f(x) dx + \int g(x) dx$$



$V_{incident}$

Z_L

$$z = \frac{Z_L}{Z}$$

$$\Gamma = \frac{V_{reflected}}{V}$$

$$\frac{a}{b+c} = a \div (b+c) \neq \frac{a}{b} + \frac{a}{c}$$



Integraais: Exemplos

Exemplos



$$\int x^2 dx$$

$$\int x^{\frac{1}{3}} dx$$

$$\int x^{-4} dx$$

$$\int dx$$

Exemplo



$$\int x^{\alpha} dx, \alpha \neq -1$$

Exemplo



$$\int \sqrt{x^3} dx$$

Exemplo



$$\int 3x^2 + \frac{1}{x^2} + 5x \, dx$$

Exemplo



$$\int \frac{1}{x} dx, x > 0$$

Exemplo



$$\int x^{\square} dx = i$$

Exemplo



$$\int \left(\frac{2}{x} + \sqrt{x^3} \right) dx, x > 0$$

Exemplo



$$\int e^{\lambda x} dx, \lambda \neq 0$$

Exemplo



$$\int (3 \sec x \cdot \operatorname{tg} x + \operatorname{cosec}^2 x) dx$$

Exemplo



$$\int \left(\frac{x^4 + 3x^{-\frac{1}{2}} + 4}{\sqrt[3]{x}} \right) dx$$

Exemplo



$$\int \left(2e^x - \frac{\textit{sen} x}{\cos^2 x} + \frac{2}{x^7} \right) dx$$

Exemplo



$$\int \cos x dx$$
$$\int \sec^2 x dx$$
$$\int \operatorname{sen} x dx$$

Exemplo



$$\int \sec x \cdot \operatorname{tg} x \, dx$$

$$\int \frac{1}{1+x^2} \, dx$$

$$\int \frac{1}{\sqrt{1-x^2}} \, dx$$

Exemplo



$$\int \left(\sqrt{x^3} + \sqrt[3]{x^2} \right) dx$$

Exemplo



$$\int (x-1)^2 (x+1)^2 dx$$

Exemplo



$$\int \operatorname{tg}^2 x \cdot \operatorname{cosec}^2 x dx$$

Exemplo



$$\int \operatorname{tg}^2 x \, dx$$

Exemplo



$$\int \frac{5x^3 + 7x^2 - 5x + 2}{x^2} dx$$